lished sources. The zero tolerance MRSA policy set by NHS England, which includes financial sanctions, was implemented in the model. **RESULTS:** Over a one-year time horizon, although prevalence was higher on the high-risk ward, outbreaks occurred most frequently on the low-risk ward due to the higher number of patients. Preliminary results indicate that fewer outbreaks were declared when using WGS to identify the MRSA strain compared to current methods, due to the increased sensitivity of WGS in identifying unrelated MRSA strains and therefore classifying fewer concurrent colonisations/infections as 'outbreaks'. Fewer outbreaks resulted in cost-savings due mainly to a lower cost of fines, and therefore WGS is likely to be cost-effective where the technology and infrastructure is available. **CONCLUSIONS:** This newly developed model is the first formal attempt to evaluate the cost-effectiveness of WGS for detecting and monitoring outbreaks of MRSA. Initial results indicate that WGS will be cost-effective due to fewer outbreaks being declared. Further planned developments include expanding the model to simulate a complete hospital, as well as including start-up costs of setting up WGS services.

PMD35
COST-EFFECTIVENESS OF AQP4 ANTIBODY DETECTION WITH CELL-BASED ASSAY COMPARED WITH ELISA FOR DEVIC DISEASE DIAGNOSIS IN COLOMBIA
Rosselli D[1], Acosta A[1], Castañeda C[1], Ruiz-Patiño A[2], Ruiz R[1]
[1]*Pontificia Universidad Javeriana, Bogota, Colombia,* [2]*Hospital Universitario San Ignacio, Bogotá, Colombia*
OBJECTIVES: Neuromyelitis optica (NMO) or Devic disease is a rare chronic condition characterized by demyelinating lesions in the central nervous system. The aim of this study was to evaluate cost-effectiveness of the detection of antibodies against the protein aquaporin water channel 4 (AQP4) with cell-based assay (CBA), compared with ELISA, for the diagnosis of NMO in Colombia. **METHODS:** A decision tree model was constructed to compare costs, correctly diagnosed cases and relapses averted in patients with clinical suspicion of NMO, that were subjected to diagnostic tests for the detection of AQP4 antibodies. The analysis was undertaken from a third-party payer perspective, one year time horizon (first year with the disease) taking all costs for treatment and relapses, in 2014 Colombian pesos, from official published prices (1 USD = 2,033 COP). Since the CBA kit is not available in Colombia (currently samples are processed abroad), the price was obtained from the manufacturer and set in a national laboratory. Clinical variables were from a systematic literature review. Univariate and probabilistic sensitivity analyses (a Monte Carlo simulating a cohort of 1000 patients) were conducted. **RESULTS:** Identification of AQP4 antibodies with CBA is a dominant strategy: more effective (855 correctly diagnosed patients compared with 765 detected by ELISA, and 130 avoided relapses), and less costly, with expected yearly costs per correctly diagnosed Devic patient of USD $14,658 compared with $15,614 for ELISA. Using CBA may represent savings in terms of reduced costs of treating disease and relapse with hospitalization. **CONCLUSIONS:** AQP4 antibody identification by the CBA method is a cost-saving diagnostic test, dominant over the ELISA method.

PMD36
COST EFFECTIVENESS OF LEFT ATRIAL APPENDAGE CLOSURE VERSUS WARFARIN FOR STROKE RISK REDUCTION IN NON-VALVULAR ATRIAL FIBRILLATION IN CMS PATIENTS
Reddy V[1], Akehurst R[2], Amorosi SL[3], Armstrong S[4], Beard S[5], Knight C[5], Taggart C[4], Holmes D[6]
[1]*Mount Sinai, New York, NY, USA,* [2]*University of Sheffield, Sheffield, UK,* [3]*Boston Scientific, Marlborough, MA, USA,* [4]*GfK Custom Research, Wayland, MA, USA,* [5]*BresMed, Sheffield, UK,* [6]*Mayo Clinic, Rochester, MN, USA*
OBJECTIVES: Stroke is the most severe and debilitating consequence of atrial fibrillation (AF), with many patients ranking the resultant disability as worse than death. Warfarin, the established first-line therapy, is effective at reducing ischemic stroke, but is associated with increased bleeding risk and lower quality of life (QoL). Left atrial appendage closure (LAAC) with the Watchman Device has been found to be superior to warfarin at reducing risk of stroke in AF patients. This analysis sought to assess the cost effectiveness of LAAC versus warfarin for stroke prevention in non-valvular AF from the perspective of the US Centers for Medicare and Medicaid Services (CMS). **METHODS:** A Markov model was constructed comparing clinical outcomes, QoL, and total costs of LAAC versus warfarin using PROTECT AF 4-year data. All clinical events reported in PROTECT AF were modeled over 1-year increments for 20 years to determine time to cost effectiveness. The model was populated with a cohort of 10,000 70-year old patients with a mean CHADS2 score of 2. Cost data were taken from 2015 US DRGs. One-way and probabilistic sensitivity analyses were performed. **RESULTS:** LAAC patients were estimated to live an additional 1.1 quality-adjusted life years (QALYs) compared to warfarin patients. By year six, LAAC was cost effective in terms of QALYs ($40,221/QALY) and life years gained ($45,610/LYG). LAAC was dominant over warfarin at 10 years and remained so for the 20-year time horizon. The probability of cost effectiveness at 10 years was 99% given a willingness-to-pay threshold of $50,000 per QALY. **CONCLUSIONS:** LAAC with the Watchman Device is a cost effective alternative to warfarin therapy for stroke risk reduction in non-valvular AF. LAAC provides improved QOL, increased life expectancy, and offers better value to CMS over a patient's lifetime.

PMD37
A SYSTEM DYNAMICS MODEL FOR THE COST-EFFECTIVENESS EVALUATION OF BACTERIAL WHOLE-GENOME SEQUENCING FOR MONITORING OUTBREAKS OF CLOSTRIDIUM DIFFICILE
Buchanan-Hughes AM[1], Agirrezabal I[1], Eddowes LA[1], Luheshi LM[2], Török ME[3], Sagoo GS[2]
[1]*Costello Medical Consulting Ltd., Cambridge, UK,* [2]*PHG Foundation, Cambridge, UK,* [3]*University of Cambridge, Cambridge, UK*
OBJECTIVES: To develop a system dynamics model to analyse the cost-effectiveness of bacterial whole-genome sequencing (WGS) versus current typing methods (ribotyping) alone in monitoring outbreaks of Clostridium difficile (C.diff) in the UK National Health Service (NHS). **METHODS:** The model, constructed using Insight Maker (insightmaker.com), simulated a 33-bed ward. Patients were assumed to move between five states: susceptible, susceptible and vulnerable due to antimicrobial use, colonised, colonised and vulnerable, or infected (symptomatic). Clinical inputs were identified from peer-reviewed primary research papers, systematic reviews, published models, data published by the NHS and from clinical experts. Relevant costs were identified from Department of Health guidelines on C.diff infection management and other published sources, and inflated to 2014 values where necessary. We assumed that a fine of £10,000 per case was issued when evidence of hospital transmission was found, indicating that the infection was hospital-acquired; English hospitals are fined for hospital-acquired cases above an annual threshold, which varies between hospitals. **RESULTS:** As a result of the low prevalence of C.diff, no outbreaks were observed over the one-year time horizon. There were 2.95 cases of C.diff in the base case, equivalent to 2.68 cases per 10,000 bed days. Fewer cases showed evidence of transmission when using WGS, which resulted in lower fines for the hospital (assuming a zero case tolerance policy). Annual C.diff-attributable costs for the ward were therefore £1,490 lower when WGS was used compared to ribotyping alone, although initial setup costs and service running costs were not included. **CONCLUSIONS:** This system dynamics model is the first formal attempt to evaluate the cost-effectiveness of WGS for monitoring connections between C.diff cases. Depending on the annual threshold for cases and the availability of WGS, initial results indicate that WGS may be cost-saving at a hospital level due to fewer cases being subject to a fine.

PMD38
COSTS AND CONSEQUENCES OF DIALYSIS RELATED INFECTIONS: IMPLICATIONS FOR THE BUNDLED PAYMENTS FOR CARE IMPROVEMENT INITIATIVE
Queeley GL, Campbell ES
Florida A&M University, Tallahassee, FL, USA
OBJECTIVES: Treatment for post dialysis infections imposes a significant economic burden on the national health care system. The rate of hospitalization for bloodstream infections for Hemodialysis (HD) alone has increased 51 percent with an estimated cost in excess of $US 23,000 per hospitalization. The new bundled payments for care improvement (BPCI) initiative, promotes healthcare interventions that improve patient outcomes at a lower cost. Peritoneal dialysis (PD) has been purported to lower the risk of bloodstream infections, which could potentially reduce hospitalization costs. The purpose of this study was to estimate the cost per hospitalizations averted by substituting PD for HD. **METHODS:** Data on treatment costs, and hospitalization rates for HD and PD were obtained from the USRDS registry. Using a payer perspective, a decision tree model was used to estimate the ICER. Univariate sensitivity analysis was done to assess the robustness of the results. **RESULTS:** Using PD was clearly cost-effective with an average cost of $50,320.08 per patient per year and resulted in 1,202 dialysis related hospitalizations; compared to HD which cost $69,916.28 per patient per year and resulted in 1,462 dialysis-related hospitalizations. **CONCLUSIONS:** PD resulted in overall lower mean costs and hospitalization rates compared to HD. Considering the "payment for results" nature of the BPCI, PD has a high likelihood of being adopted as the preferred intervention in ESRD.

PMD39
A COST-EFFECTIVENESS ANALYSIS OF BIOMARKER TESTING TO TARGET TREATMENT TO PATIENTS WITH MILD COGNITIVE IMPAIRMENT AT INCREASED RISK OF ALZHEIMER'S DISEASE
Michaud TL, Kuntz K
University of Minnesota, Minneapolis, MN, USA
OBJECTIVES: To quantify the potential value of cerebrospinal fluid (CSF) biomarker testing for patients with mild cognitive impairment (MCI). Biomarkers provide information about a patient's risk of developing AD and can allow for early targeted interventions for those patients found to be at higher risk of AD than others. **METHODS:** We developed a state-transition Markov model to project lifetime AD-free life years, costs and quality-adjusted life years (QALYs). We conducted a cost-effectiveness analysis of using CSF biomarker testing combined with the subsequent treatments to delay the clinical diagnosis of AD (test-treat) compared to no treatment, and treatment strategies. For the test-treat strategies, we considered treating by different levels of risk, varying from treating only the highest risk group to treating all but the lowest risk group (total 5 risk levels). We performed deterministic and probabilistic sensitivity analyses (PSA) and conducted an expected value of perfect information (EVPI) analysis to estimate the value of eliminating uncertainty of all parameters. **RESULTS:** We found that treating MCI patients by their risk levels produced extra 0.9-3.8 AD-free life months compared to no treatment. Three out of four test-treat strategies were ruled out by extended dominance. No treatment resulted in the highest cost and the highest effectiveness, with an incremental cost-effectiveness ratio of $30,000 per QALY compared to treating all patients. No treatment was optimal in 63% of the PSA iterations over 37% of the treatment strategy at willingness to pay of $50,000/QALY. The total EVPI was $3,512 per patient. **CONCLUSIONS:** This study illustrates the potential for early targeted interventions for MCI patients who are at increased risk of developing AD. The design of this model and the findings could also be used to guide further research evaluating the cost-effectiveness of other biomarkers used to identify MCI patients at increased risk of progression to AD.

PMD40
COST-EFFECTIVENESS ANALYSIS OF EXTERNAL LOOPING RECORDING COMPARED TO HOLTER MONITORING FOR SYNCOPE IN COLOMBIA
Orozco JJ[1], Shrivastav M[2], Vilendrer S[2]
[1]*Medtronic, Medellin, Colombia,* [2]*Medtronic, Minneapolis, MN, USA*
OBJECTIVES: Cardiac rhythm diseases related to syncope are of increasing incidence and prevalence worldwide including Colombia. Diagnosing transient arrhythmia is difficult with short term monitoring methods. We sought to compare cost-effec-

tiveness of 24-hours Holter and up to 30 days ELR, each with different diagnostic yield, compliance, and costs in patients with syncope in Colombia. **METHODS:** An analytical decision tree model was constructed including diagnostic yield, patient compliance, mortality rate, QALYs, associated costs to diagnosis and not having a diagnosis. Third party payer perspective, five year horizon and 3.5% discount rate for utilities and costs were assumed. Patient pathways and model inputs were ascertained from doctor interviews and literature search. Average market prices of US$175 for 24-hours Holter and US$627 for ELR were used. Micro-costing for avoided emergency visits and hospitalizations was done via Colombian key opinion leader interviews and official tariffs for costs of not having a diagnosis along five years. Uncertainty adjustments were done when judged appropriate. Incremental Cost Effectiveness ratio (ICER) was done, incorporating deterministic and probabilistic sensitivity analyses. **RESULTS:** 24-Holter strategy had 19% diagnosis yield compared to 63% for ELR. Over a five year horizon, ELR strategy obtained more QALYs than 24-Holter (2.62 vs. 2.18), at lower cost, been dominant over 24-hours Holter with US$2,165.6 incremental savings per incremental QALY. Sensitivity analysis showed the result to be particularly sensitive to disease and untreated syncope utilities and cost. The probabilistic sensitivity analysis showed a robust model with 95% confidence intervals of 1.83–2.57 QALYs for 24-hours Holter and 2.21–3.04 QALYs for ELR. **CONCLUSIONS:** Over a 5 year horizon, the ELR with greater utility (QALY) to lower costs, as demonstrated through greater incremental savings per QALY, was dominant over 24-Holter. The superior results of the ELR are attributable in part to the greater diagnostic yield and higher patient compliance.

PMD41

THE COST-EFFECTIVENESS OF DRUG-ELUTING STENTS VERSUS BARE METAL STENTS IN TAIWAN

Fang N[1], Yao M[2], Tseng T[1]
[1]*Tunghai University, Taichung city, Taiwan,* [2]*National Chiao Tung University, Hsinchu county, Taiwan*

OBJECTIVES: Drug-eluting stents (DESs) have been shown to reduce in-stent restenosis and target vessel revascularization (TVR) in several large clinical trials. We conducted this study to explore the differences in the cost and clinical outcome of DESs and bare metal stents (BMSs). **METHODS:** We retrospectively analyzed the clinical data and costs of patients with stable angina treated with coronary stents in 2012 at a medical center in Taiwan. **RESULTS:** We enrolled 245 patients treated with DESs and 194 patients treated with BMSs. The use of DESs is a lower rate of TVR compared with that with BMSs (11% vs. 20%, $p = 0.015$). Compared with the DES group, the overall costs were significantly higher in the BMS group (NT$237727.0±89714.9 vs. NT$187017.3±129713.5, $p < 0.001$). **CONCLUSIONS:** The use of DESs reduces the rate of TVR at 2 years after intervention, but is probably not cost-effective compared with BMSs in patient.

PMD42

ECONOMIC EVALUATION OF PACLITAXEL-ELUTING BALLOON CATHETER FOR PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY (PTA) IN MEXICAN POPULATION WITH PERIPHERAL ARTERIAL OBSTRUCTIVE DISEASE

Ceballos R[1], Orozco JJ[2], Soto H[3], Carmona M[4], Escobar Juárez Y[4]
[1]*Medtronic, Mexico, Mexico,* [2]*Medtronic, Medellin, Colombia,* [3]*Universidad Autonoma Metropolitana, México D.F., Mexico,* [4]*HS Estudios Farmacoeconómicos, Mexico City, Mexico*

OBJECTIVES: To perform a full economic evaluation through a cost-effectiveness analysis of the use of paclitaxel-eluting balloon catheter (IN.PACT™ Admiral) in comparison with balloon catheter, for PTA in the treatment of peripheral obstructive artery diseases in Mexican population, from the perspective the public health care system in Mexico. **METHODS:** The measure of effectiveness considered was decrease in the rate of target lesion revascularization (TLR). Information about efficacy and safety of the intervention was obtained from a systematic review. Direct medical costs were considered (cost of devices as well as the procedure). An incremental cost-effectiveness analysis was performed with a horizon of two years. To demonstrate the robustness of the model, univariate sensitivity analysis and probabilistic sensitivity analysis were executed using Monte Carlo simulations. **RESULTS:** Paclitaxel-eluting balloon catheter for PTA (IN.PACT™ Admiral) demonstrated good efficacy and safety producing a significant reduction in TLR at six months, which was maintained up to 24 months (estimated rate 14.4%), evaluated angiographically. This was significantly better than that obtained with conventional balloon angioplasty (estimated rate 40.3%) in the treatment of restenosis. Total average costs were $102,299.00 and $115,652.00 respectively. Therefore the incremental cost-effectiveness ratio (ICER) obtained showed that the paclitaxel-eluting balloon catheter for PTA (IN.PACT™ Admiral) is a dominant option. Clinical benefits were clearly demonstrated by the improvement in the ankle-arm index and Rutherford category. **CONCLUSIONS:** Paclitaxel-eluting balloon catheter for PTA (IN.PACT™ Admiral) proved to be more effective and less costly than the standard of care in the treatment of peripheral obstructive arterial disease, for Mexican public health care institutions.

PMD43

COST-ANALYSIS OF MEDIHONEY CALCIUM ALGINATE VERSUS AQUACEL AG DRESSING FOR CHRONIC LEG ULCERS TREATMENT UNDER THE BRAZILIAN PUBLIC PAYER PERSPECTIVE

Tolentino AC[1], Turkos M[2], Dick S[2]
[1]*Self, Rio de Janeiro, Brazil,* [2]*Derma Sciences, Princeton, NJ, USA*

OBJECTIVES: To develop cost-analysis of MEDIHONEY CALCIUM ALGINATE (MEDIHONEY) versus ACQUACEL AG (AG) dressings for chronic-wound treatment in adults, from perspective of Brazilian public payers. **METHODS:** Data from Brazilian Hospital Information System from October 2013 to September 2014 was used to define the annual number of hospital admissions due to chronic wounds (only non-surgical records with L97.909 ICD-10 code included). The model assumed that patients are discharged at the time their wounds heal. No critically ill patients in ICUs were included. Only patients above 20 years old were included. Unit cost obtained from Brazilian official price lists. **RESULTS:** 95,688 hospitalizations were identified with total length of stay (LOS) of 336,939 days; deaths and mortality rates were 866 and 0.91 respectively.1 The model estimated costs for the inpatient period assuming one dressing change every 3 days for MEDIHONEY and AG, considering in both cases a similar size. Cost per dressing change was estimated as USD35.80 and US31.85 for AG and MEDIHONEY, with mean healing time of 53 and 31 days, respectively.2 Overall treatment costs were USD4,020,805.30 and USD3,577,169.00 according to the LOS and USD632.46 and USD329.12 according to MHT/patient for AG and MEDIHONEY, respectively. MEDIHONEY-related incremental costs were USD31,492,834 indicating a cost-saving profile. Adopting MEDIHONEY as wound management protocol would save USD29,025,998 for the 2013/2014-cohort. Clinical benefits for use of MEDIHONEY CALCIUM ALGINATE over AG include decreased risk of hypersensitivity to compounds, MEDIHONEY treatment is appropriate throughout wound healing process and MEDIHONEY does not induce microbial resistance.3 **CONCLUSIONS:** MEDIHONEY dressing demonstrates cost-effectiveness when compared to AG dressings. These results reinforce the need for evidence-based decision making and rational resource allocation; in addition to further studies including clinical outcomes data.

PMD44

COST EFFECTIVENESS OF SACRAL NEUROSTIMULATION FOR OVERACTIVE BLADDER IN MEXICO

Soto H[1], Sanchez K[2], Escobar Juárez Y[2], Constanzo A[2], Ceballos R[3]
[1]*Universidad Autonoma Metropolitana, México D.F., Mexico,* [2]*HS Estudios Farmacoeconómicos, Mexico City, Mexico,* [3]*Medtronic, Mexico, Mexico*

OBJECTIVES: The objective is to develop a full economic evaluation of the cost effectiveness of using sacral neurostimulation versus botulinum toxin type A and augmentation cystoplasty in the treatment of overactive bladder in Mexico, from the perspective of the public health sector. **METHODS:** A systematic literature review was conducted to identify articles to extract data on safety and efficacy of: sacral neurostimulation, botulinum toxin type A, and augmentation cystoplasty. A cost-effectiveness analysis was performed using a Markov model with a time horizon of 1 to 5 years. The effectiveness was measured as continence years and quality-adjusted life year (QALY). Only direct medical costs were considered, such as: medicine, surgery, devices, adverse events, days of hospitalization and laboratory studies; an analysis of incremental cost-effectiveness ratio (ICER) and incremental cost-utility (ICU) was performed. To test the model and demonstrate the robustness, a probabilistic sensitivity analysis was performed, using Monte Carlo simulations. **RESULTS:** Sacral neurostimulation showed better efficacy with 3.65 continence years and 3.27 QALY's with a cost of $279,538.11- The ICER over botulinum toxin A was 69,917.92, less than one time the Mexican GDP per capita, for the botulinum toxin the cost was 191,143.86 with 2.39 continence years and 2.13 QALY´s; for augmentation cystoplasty the cost was $205,049.02 with 3.19 continence years and 2.85 QALY's. The probabilistic sensitivity analysis demonstrated that sacral neurostimulation is a cost-effective alternative, despite the modification of all the model's variables. **CONCLUSIONS:** Sacral neurostimulation is a very cost-effective alternative for patients in the the public health care system in Mexico, being ICU and ICER less than one time the Mexican GDP per capita.

PMD45

CARDIOVERTER-DEFIBRILLATOR: THE CHOICE BETWEEN THE NEED AND LIMITED RESOURCES

Gurtskaya G, Kulkhan T, Sasykova A, Issatayeva N
Republican Center for Health Development, Astana, Kazakhstan

OBJECTIVES: The severity of the effect in reducing the risk of sudden cardiac death has a significant positive impact on the forecast as a whole and significantly reduces overall mortality rate among different categories of cardiology patients. Meanwhile, it imposes a significant burden on the healthcare budget of the Republic of Kazakhstan. Due to the fact that the CD's implantation is an expensive method of treatment, the authors conducted a review of existing studies on the cost-effectiveness of the CD in the application of additional functions - MRI-compatible and home monitoring function. **METHODS:** The literature review of the efficacy and safety «MRI-compatible CD with home monitoring» were conducted on the database of the Cochrane Library, a database of bibliographic review on the effectiveness of medical intervention (DARE), database reviews of health technology assessment (HTA), PubMED, CADTH, NICE, Clinical Trials and TripDatabase. **RESULTS:** Search results revealed 522 publications, and from this number 3 studies were selected for the final analysis. The remaining works were excluded due to non-compliance to the PICOS' criteria. According to the data from representatives Biotronik and Medtronic in Kazakhstan the CD's cost without MRI-compatible, completed with electrodes in Kazakhstan ranges $18.000-19.000. **CONCLUSIONS:** Application in clinical practice, MRI-compatible CD with home monitoring has significant advantages - the almost complete absence of the risk of adverse events, the possibility of more frequent MRI as one of the main methods of diagnosis and early detection of various pathological conditions, the avoidance of unnecessary visits to patients without necessary evidence, revealing significant changes in the health status of patients in the constant monitoring; has a relatively small increase in the cost of a complete set of MRI-compatible CD with home monitoring in comparing with the cost of a set of CD without this function, an average of 33%.

PMD46

COST-UTILITY OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION VERSUS ANTIDEPRESSANT THERAPY FOR TREATMENT-RESISTANT DEPRESSION

Gordon LG, Nguyen K
Griffith University, Logan, Australia

OBJECTIVES: Major depressive disorder (MDD) is a debilitating disease that significantly decreases quality of life. Repetitive Transcranial Magnetic Stimulation (rTMS) therapy is a safe, non-invasive, physical treatment for major depressive disorder. We evaluated the cost-effectiveness of rTMS compared with third-line antidepres-